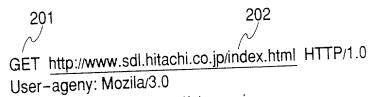


FIG. 2



Accept: text/html, image/gif, image/jpeg

FIG. 3 METHOD LOAD EVALUATION TABLE 301 303 302 304 305 300 LOAD EVALUATION VALUE L1 **METHOD** SERVER A (L1A) SERVER B (L1B) SERVER C (L1C) **GET** 2 6 HEAD 3 1 **POST** 3 9 6 4 6 2 PUT 9 6 3 DELETE 3 TRACE

FIG. 4

**OPTIONS** 

CONTENTS DATA TABLE 401 403 400 402 PROBABILITY THAT IT WILL BE IN THE CLIENT-SIDE CACHE CONTENTS SIZE (BYTES) a.htm1 90 10 b.htm1 31 90 c.htm1 599 70 a.gif 25 50 30 b.gif 1,008 5 c.xls d.pdf 19.283 5

FIG. 5

_	DA	DATA SIZE LOAD EVALUATION TABLE							
•	501	503 502			504		505		500
	λ		لم_						N
	SIZE (BYTES)	LOAD EVALUATION VALUE L2							
		SERV	ER /	4 (L2A)	SERVER	B (L2B)	SER	/ER C	(L2C)
	1~50	3		2		11			
	50~100		6		4			2	
	100~200		9		6		3		

# DYNAMIC CONTENTS GENERATION PROGRAM LOAD EVALUATION TABLE

600 601		602				603
PROGRAM	LOA	D EVALUATIO	N VAL	UE L3	,	AVERAGE DATA SIZE
	SERVER A (L3	A) SERVER B	(L3B)	SERVER C	(L3C)	(BYTES)
SEARCH1				20\		500
SEARCH2				10		876
CALC1				1		72
	6	04	605	;	606	

## FIG. 7

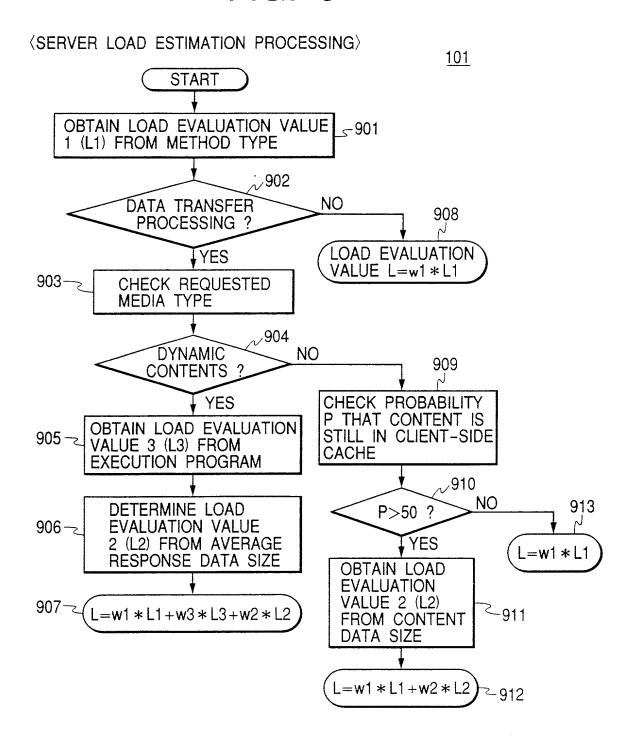
#### WEIGHT TABLE

700 701	702
7 7	$\sim$
LOAD EVALUATION VALUE L	WEIGHT W
L1	w1
L2	w2
L3	w3

# FIG. 8

#### SERVER LOAD MANAGEMENT TABLE

104 801	802
SERVER	LOAD STATUS
Α	
В	
С	



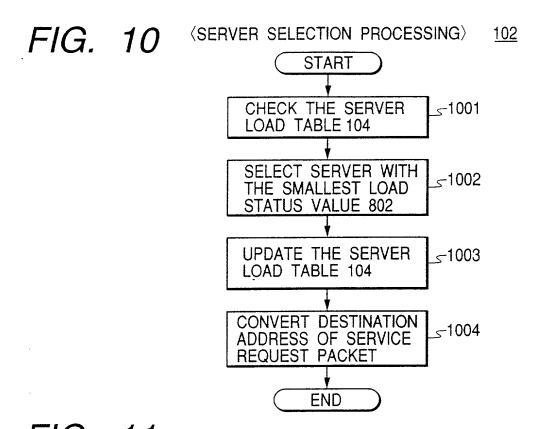


FIG. 11 107 100 1100 LOAD BALANCER SERVER A TEST MACHINE 1101 1107 <u>~1104</u> **1106**  $\wedge$ LOAD GENERATION **PACKET** CPU LOAD PROCESSING/ **ACCESS** MEASUREMENT **FORWARDING** RESPONSE TIME LOG **MEASUREMENT** PROCESSING PROCESSING **PROCESSING** *─*1105 1109 \_1102 LOAD **EVALUATION CPU CONTENTS** VALUE LOAD DATA SIZE **RESPONSE GENERATION TABLE TABLE** TIME TABLE PROCESSING N 1108 \_1110 RESPONSE TIME **TABLE** TABLE TRANSFER **TRANSFER** LOAD **PROCESSING ESTIMATION PROCESSING** TABLE 1103 103

# FIG. 12A

(LOAD GENERATION PROCESSING/ RESPONSE TIME MEASUREMENT PROCESSING)

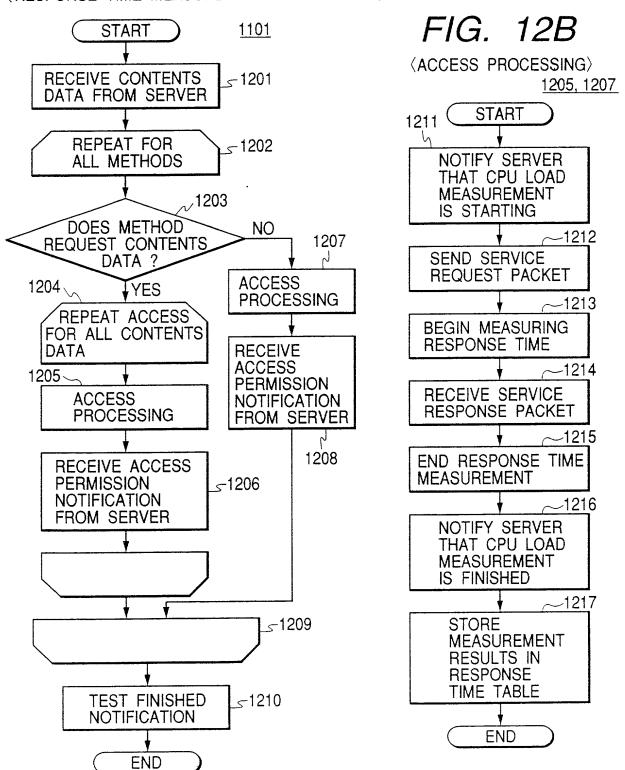
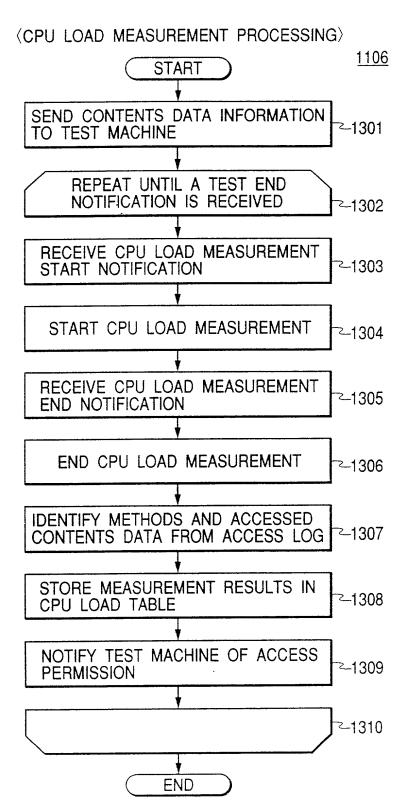


FIG. 13



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RESPONSE TIME TABLE (METHOD TABLE)

1401	1402 1	400
7	~	J
METHOD	RESPONSE TIME	
GET		
HEAD		]
POST		
PUT		
DELETE		
TRACE		1
OPTIONS		]

FIG. 15

RESPONSE TIME TABLE (METHOD TABLE)

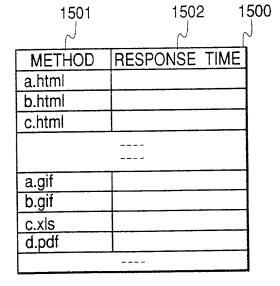


FIG. 16

RESPONSE TIME TABLE
(DYNAMIC CONTENTS GENERATION PROGRAM TABLE)

PROGRAM RESPONSE TIME
SEARCH1
SEARCH2
CALC1

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FIG. 17

CPU LOAD TABLE (METHOD TABLE)

1701	17,02	1700
$\sim$	~	$\neg \uparrow$
METHOD	CPU LOAD	
GET		
HEAD		
POST		
PUT		
DELETE		
TRACE		_
OPTIONS		

FIG. 18

CPU LOAD TABLE

(DYNAMIC CONTENTS GENERATION PROGRAM TABLE)

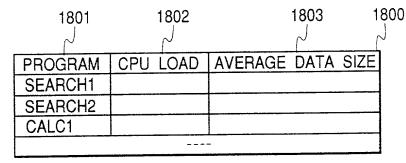
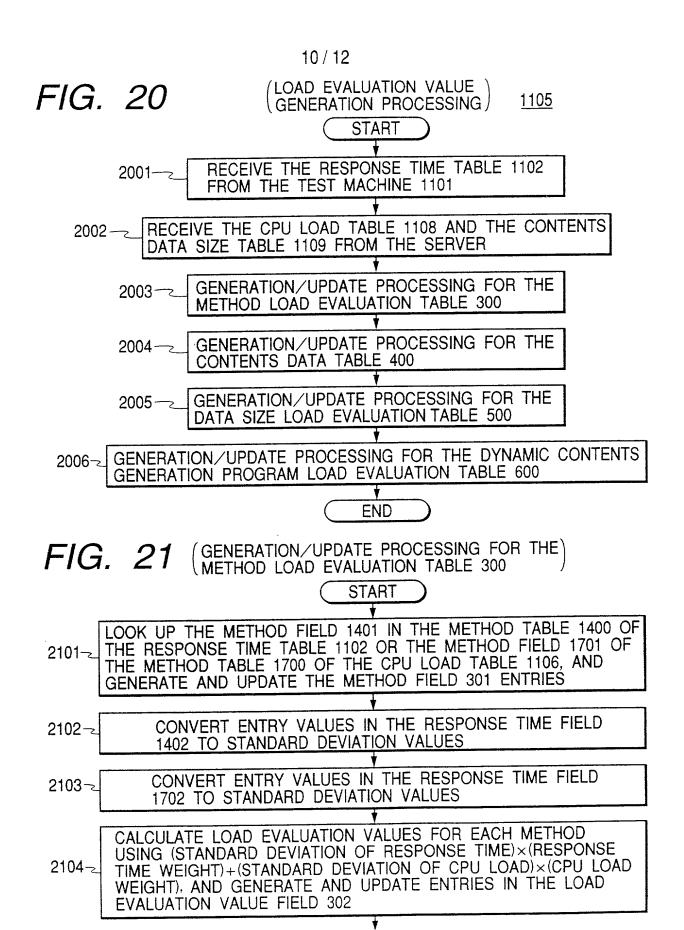


FIG. 19

CONTENTS DATA SIZE TABLE

1901	1	902	1109
~		~	$\mathcal{L}$
CONTENTS	DATA	SIZE	
a.html			_
b.html			
c.html			
			_
a.gif			_
b.gif			
c.xls			
d.pdf			_

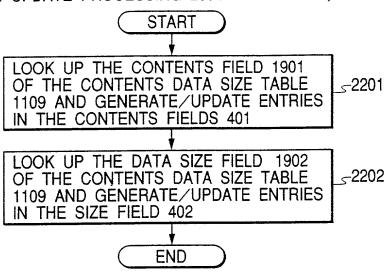


**END** 

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### FIG. 22

CONTENTS DATA TABLE 400 GENERATION



### FIG. 23

(DATA SIZE LOAD EVALUATION TABLE 500)
GENERATION/UPDATE PROCESSING 2005)

START

LOOK UP THE CONTENTS DATA SIZE TABLE 1109
TO GROUP THE TIME TABLE 1102 (CONTENTS DATA
TABLE 1500) ENTRIES ACCORDING TO THEIR
ASSOCIATED SIZE FIELD 501 ENTRIES IN THE DATA
SIZE LOAD EVALUATION TABLE

DETERMINE AVERAGE VALUE OF THE RESPONSE TIME FIELD 1500 FOR EACH OF THE GROUPS

CONVERT THE AVERAGES DETERMINED AT STEP 2301 TO STANDARD DEVIATION VALUES

USE THE STANDARD DEVIATIONS DETERMINED AT STEP 2303 AS THE LOAD EVALUATION VALUE L2 FOR THE SIZE FIELD 501 ENTRIES

\_\_-2304

**~2301** 

<sub>5</sub>-2302

<u>\_</u> 2303

END

(DYNAMIC CONTENTS GENERATION PROGRAM LOAD EVALUATION)

